

Vedder River Flood Response Plan

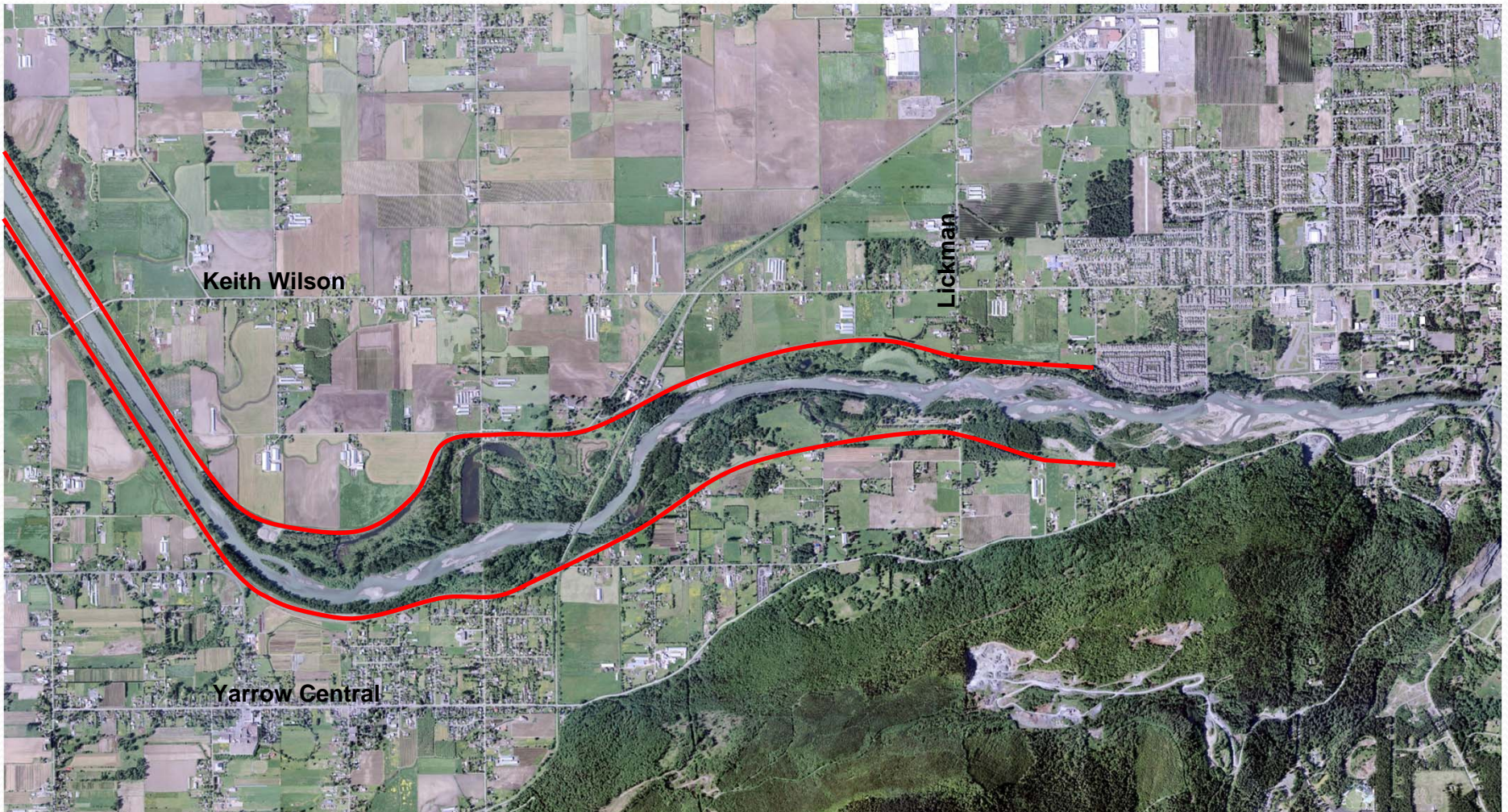
September 6, 2011

Vedder River Floods

- Spring/summer – snowmelt events
 - Smaller peaks, longer duration (months)
- Fall/winter - rain or rain-on-snow events
 - Larger peaks, shorter duration (1-2 days)
 - Limited advance warning



Dyke System



Flood Hazard Management

- Dyke maintenance and upgrades
- Flood construction levels
- Monitoring and maintenance of channel capacity
 - Gravel removals every two years
- Debris management





Vedder River Flood Response Plan

- Objective: “to prevent any loss of life, and to minimize damage to and loss of property resulting from flooding due to high water levels on the Vedder River”
- Roles and responsibilities of the City of Chilliwack and external agencies
- Activities undertaken by City of Chilliwack
 - Triggered by forecasts and water levels

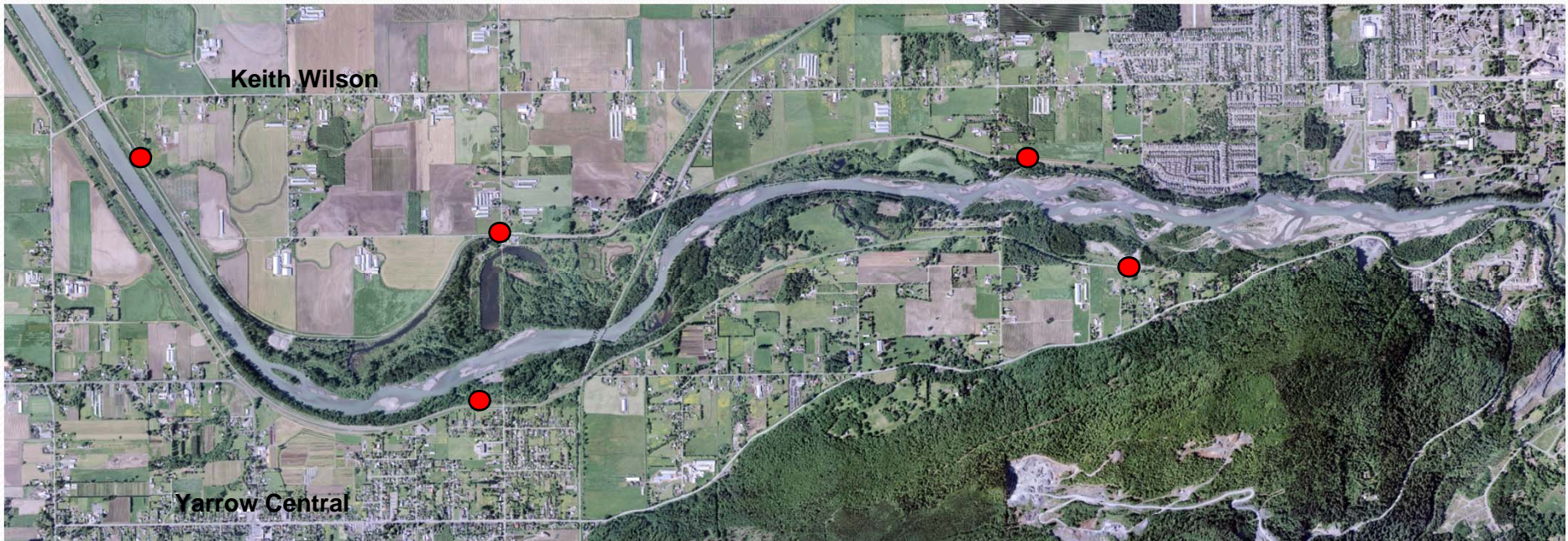


Dyke Breach Analysis

- Flood preparedness and response tool:
 - Flow paths
 - Timing
 - Depth

Dyke Breach Analysis

- Five locations:



- Two flood events:
 - 1:200 (Design Flood) = 1,470 cu.m/s
 - 1:6 (1975 Flood) = 787 cu.m/s

Yarrow Flood - 1975



Vedder River High Flow Events

Year	Max Instantaneous Flow (cu.m/s)	Date
2003	1140	October 20
2006	1040	November 6
1980	856	December 26
1975	787	December 3
1979	781	December 17
1986	767	November 23
1978	762	November 7
2002	581	January 8
2004	551	November 24
1999	535	November 12

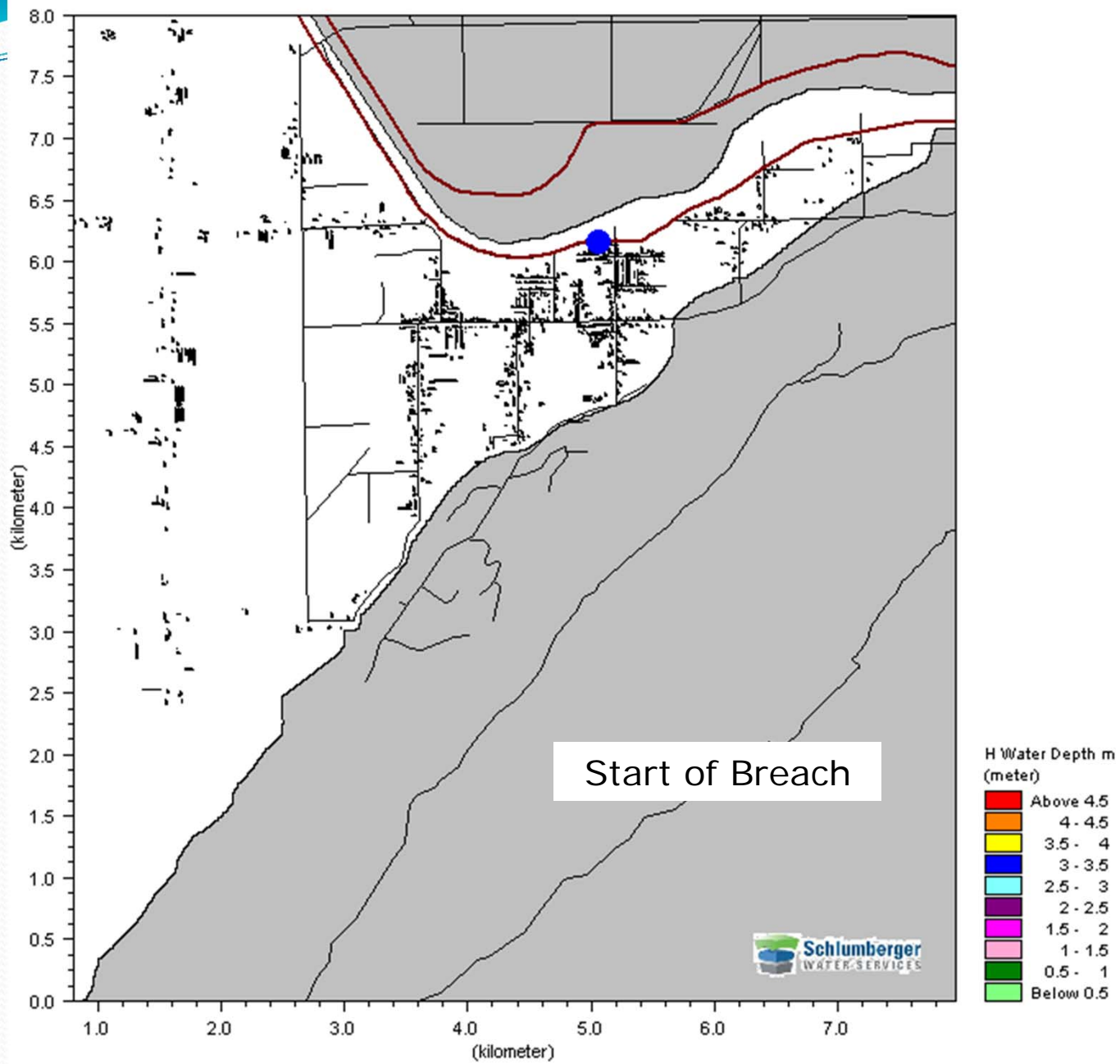
- Plus 1989 & 1990 floods (no records)

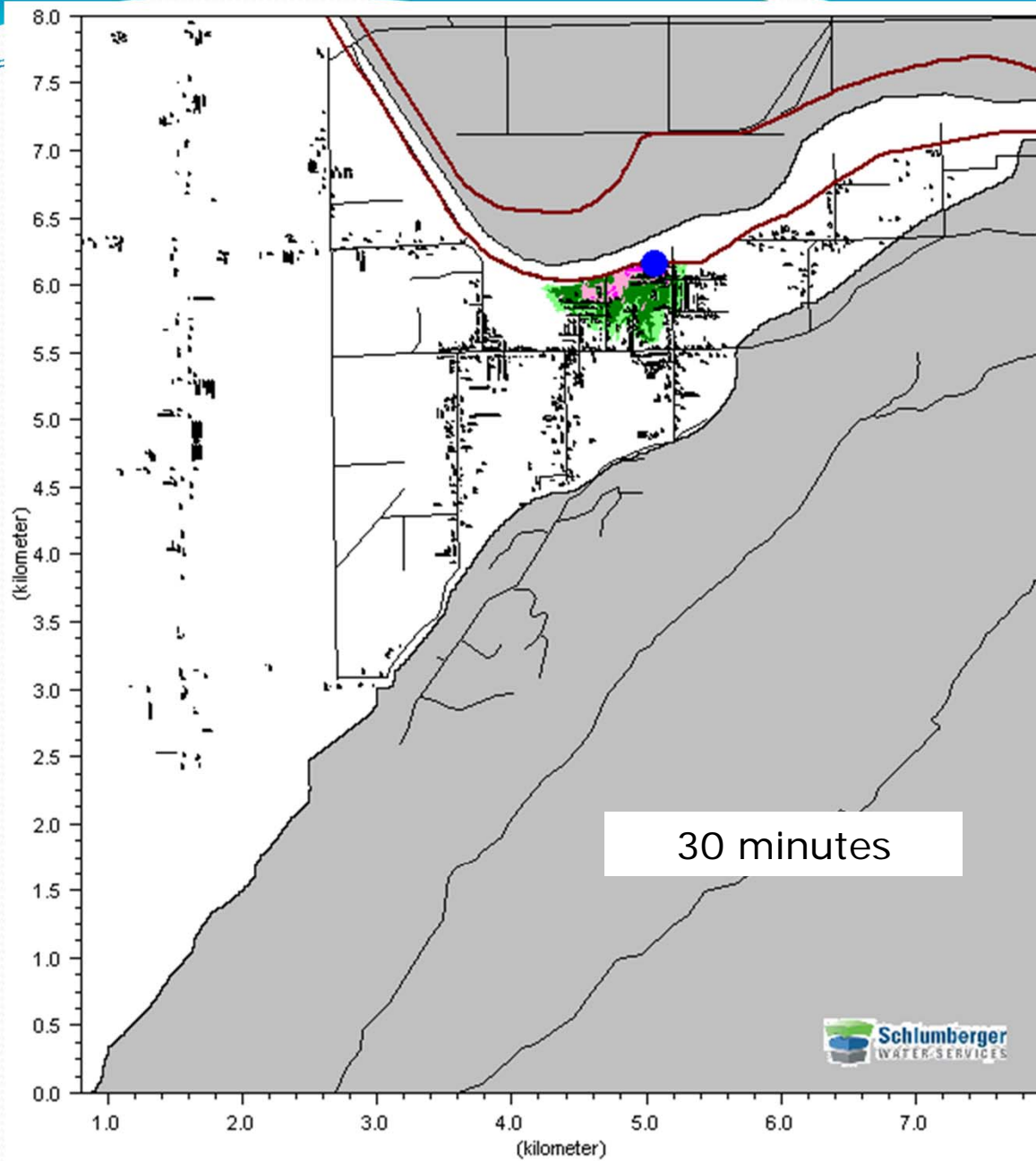


Dyke Breach Results (1 in 200 Year Event)

Middle Dyke Breach South Side

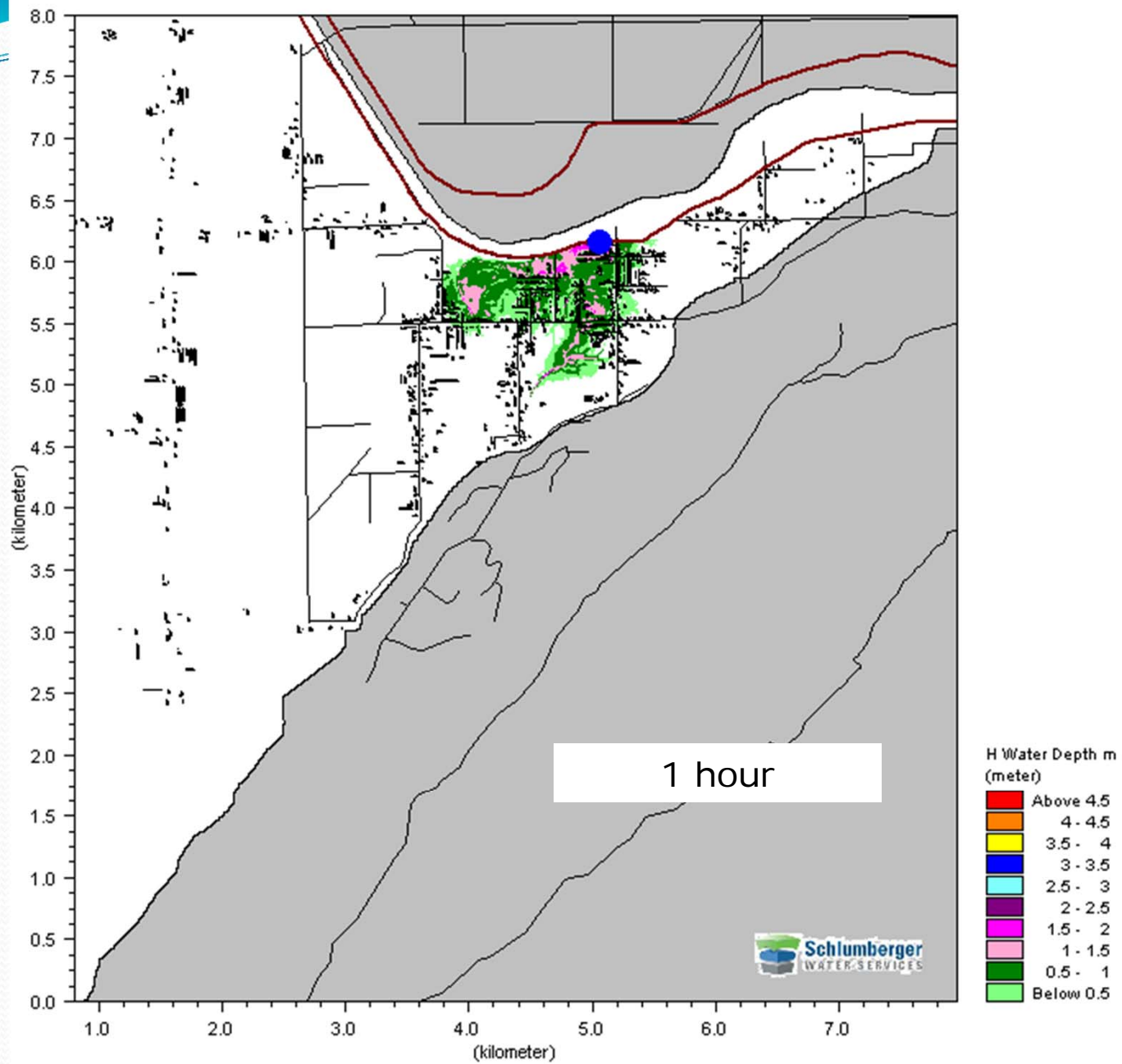


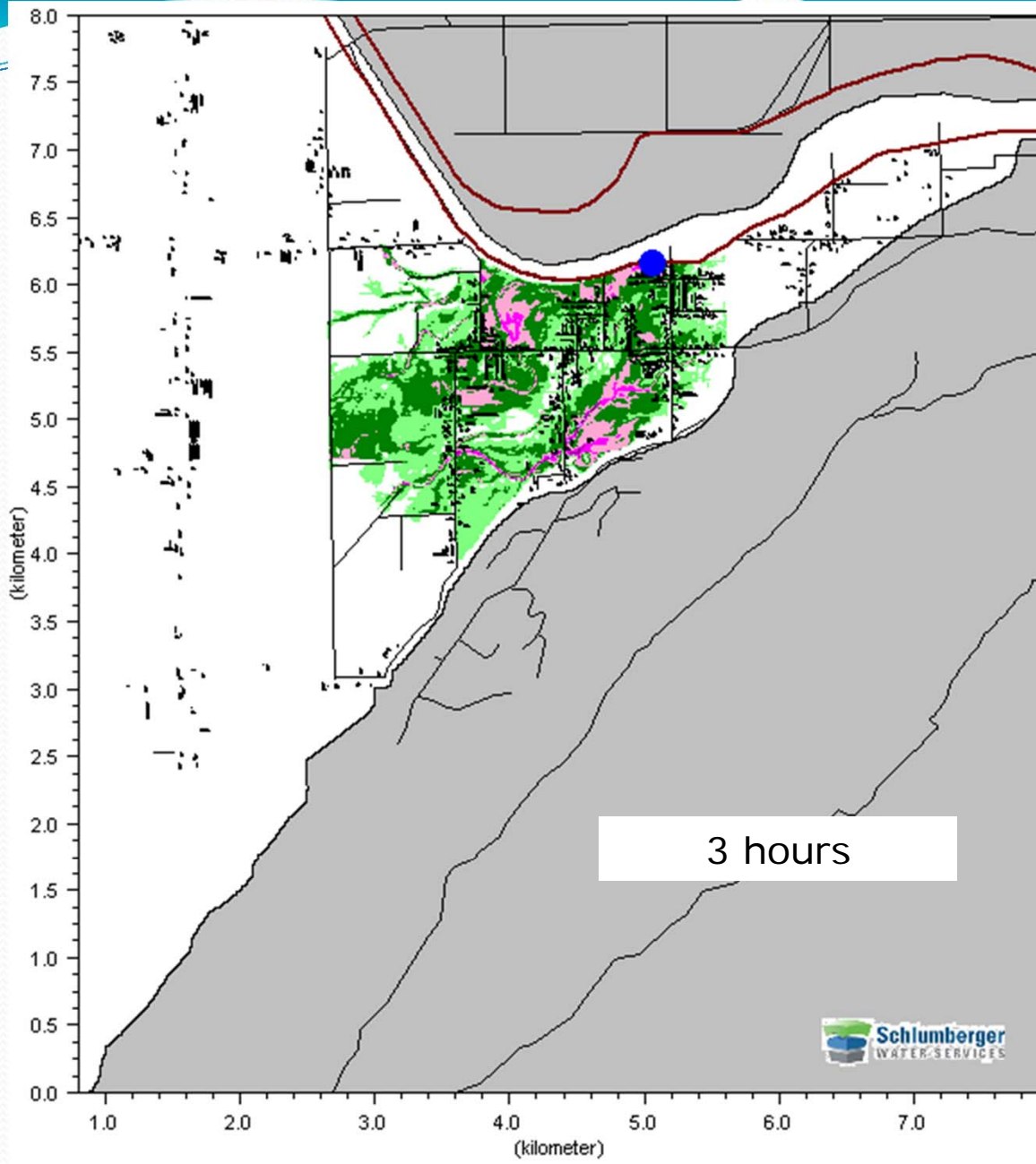


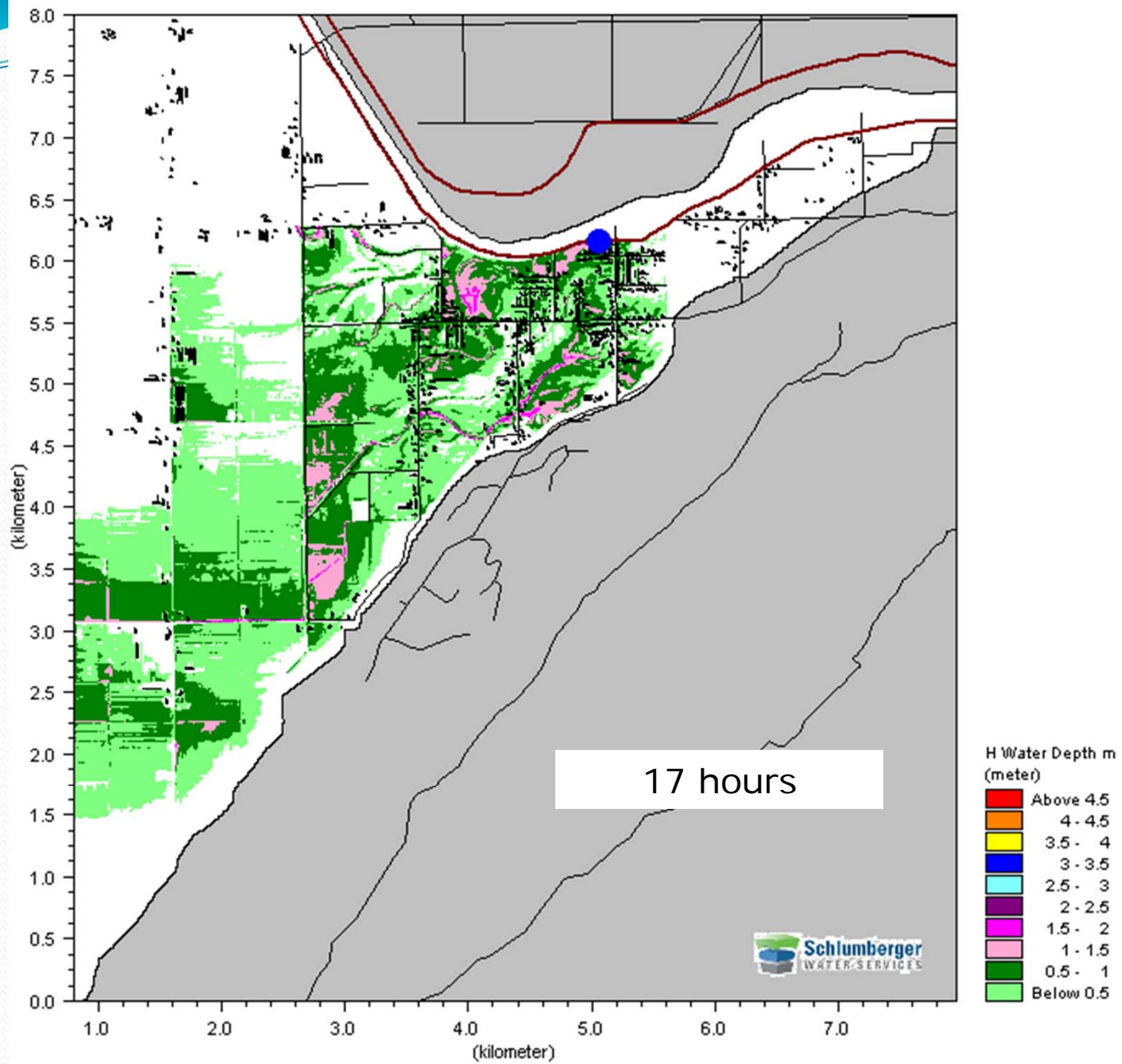


H Water Depth m
(meter)

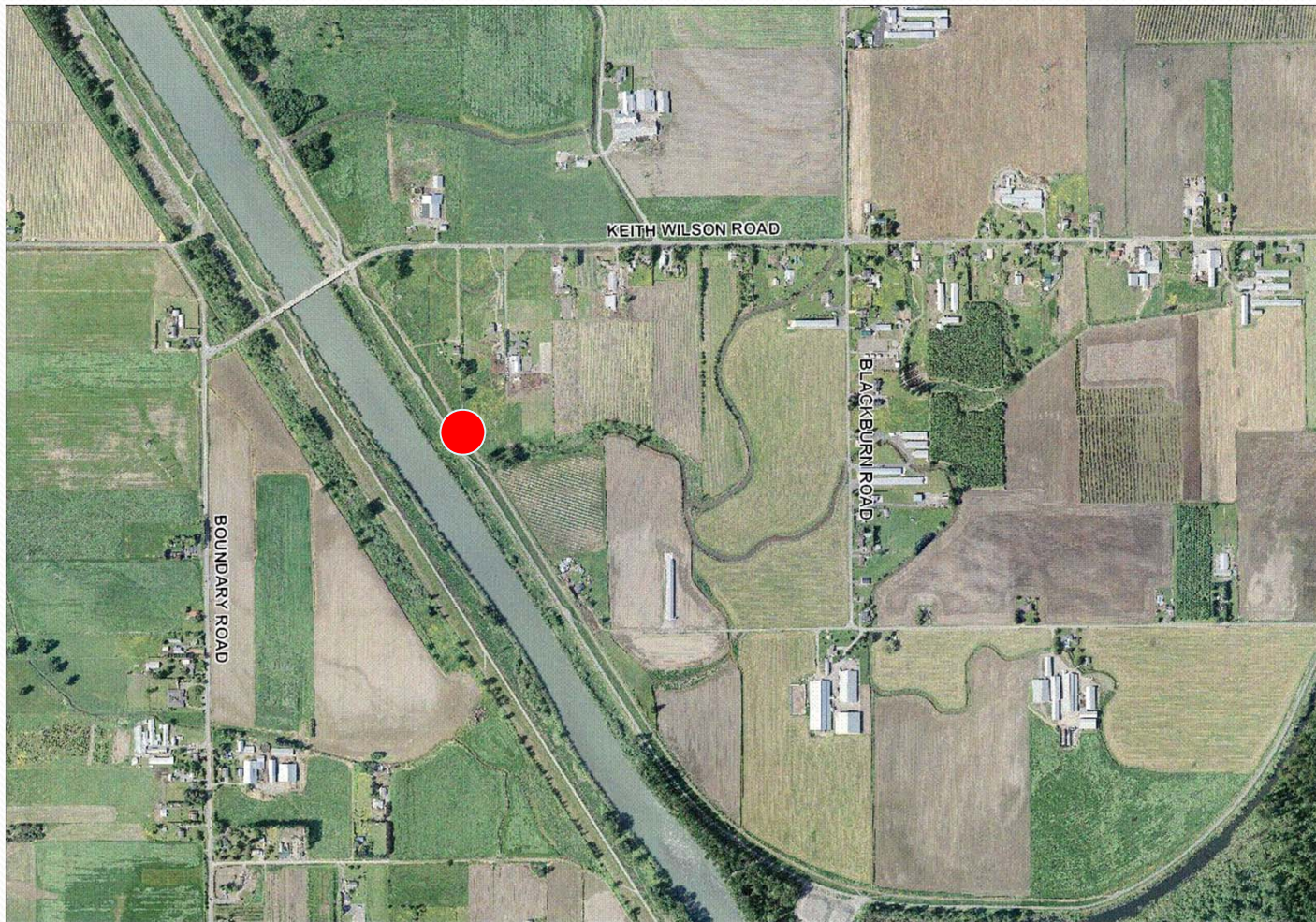
- Above 4.5
- 4 - 4.5
- 3.5 - 4
- 3 - 3.5
- 2.5 - 3
- 2 - 2.5
- 1.5 - 2
- 1 - 1.5
- 0.5 - 1
- Below 0.5

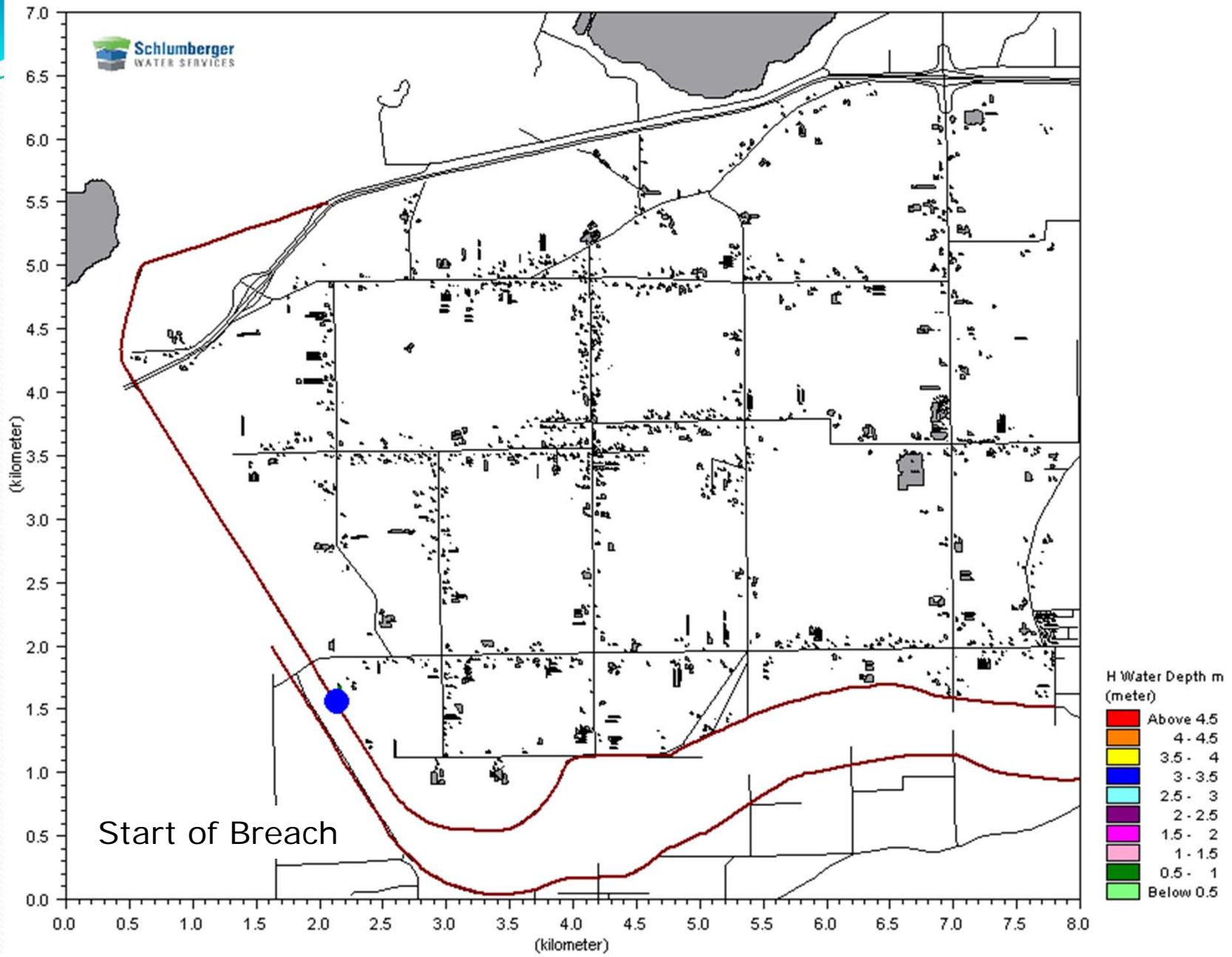


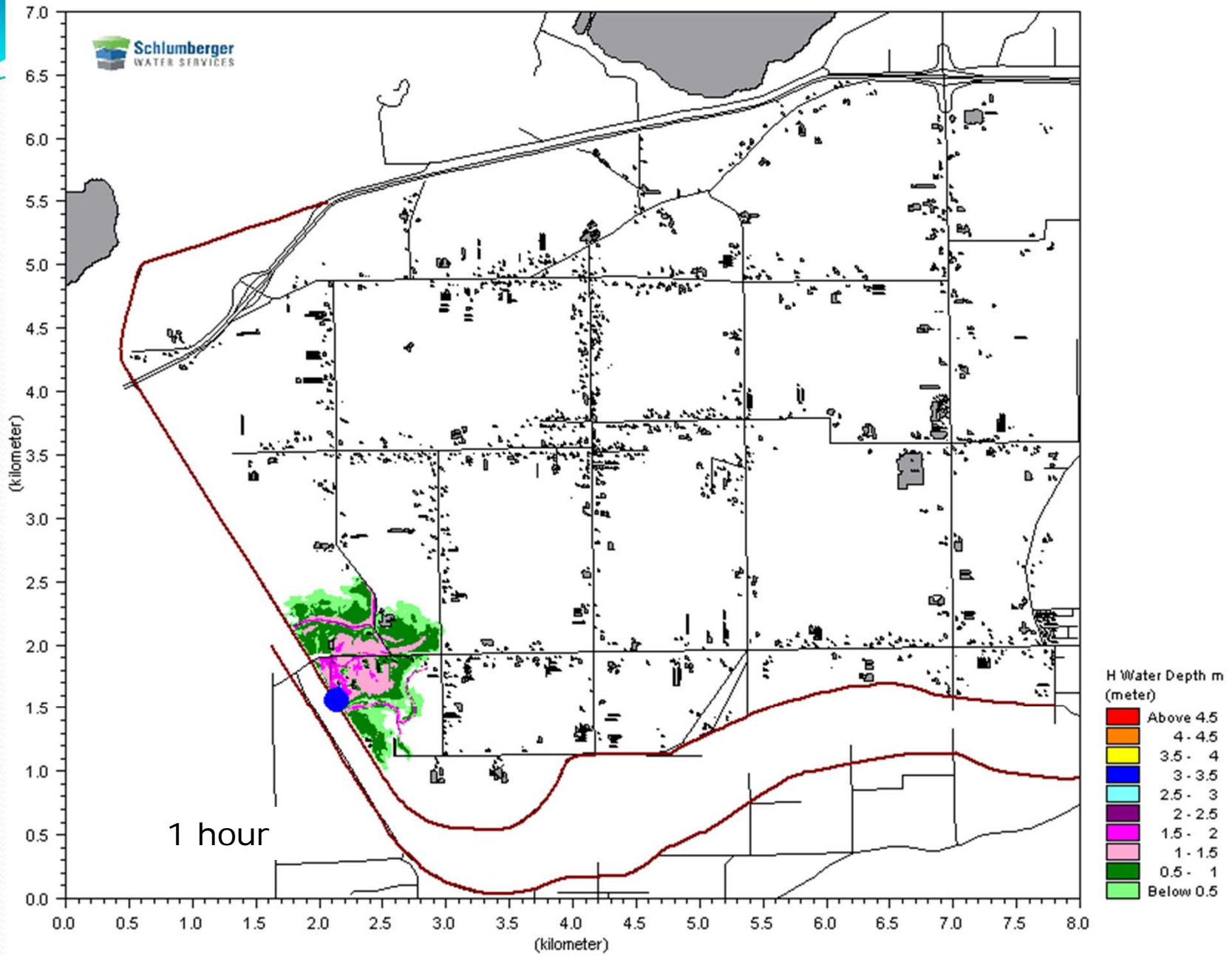


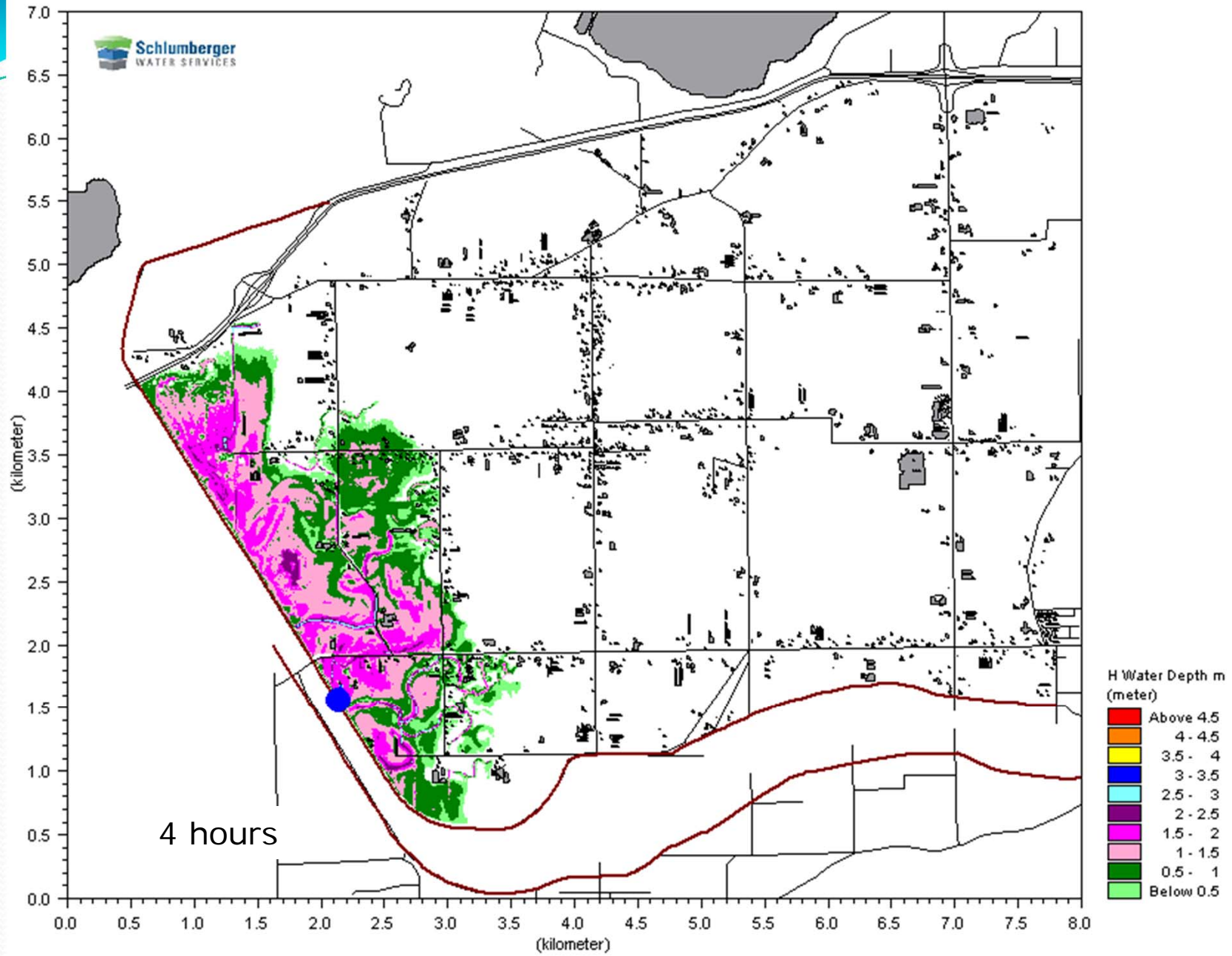


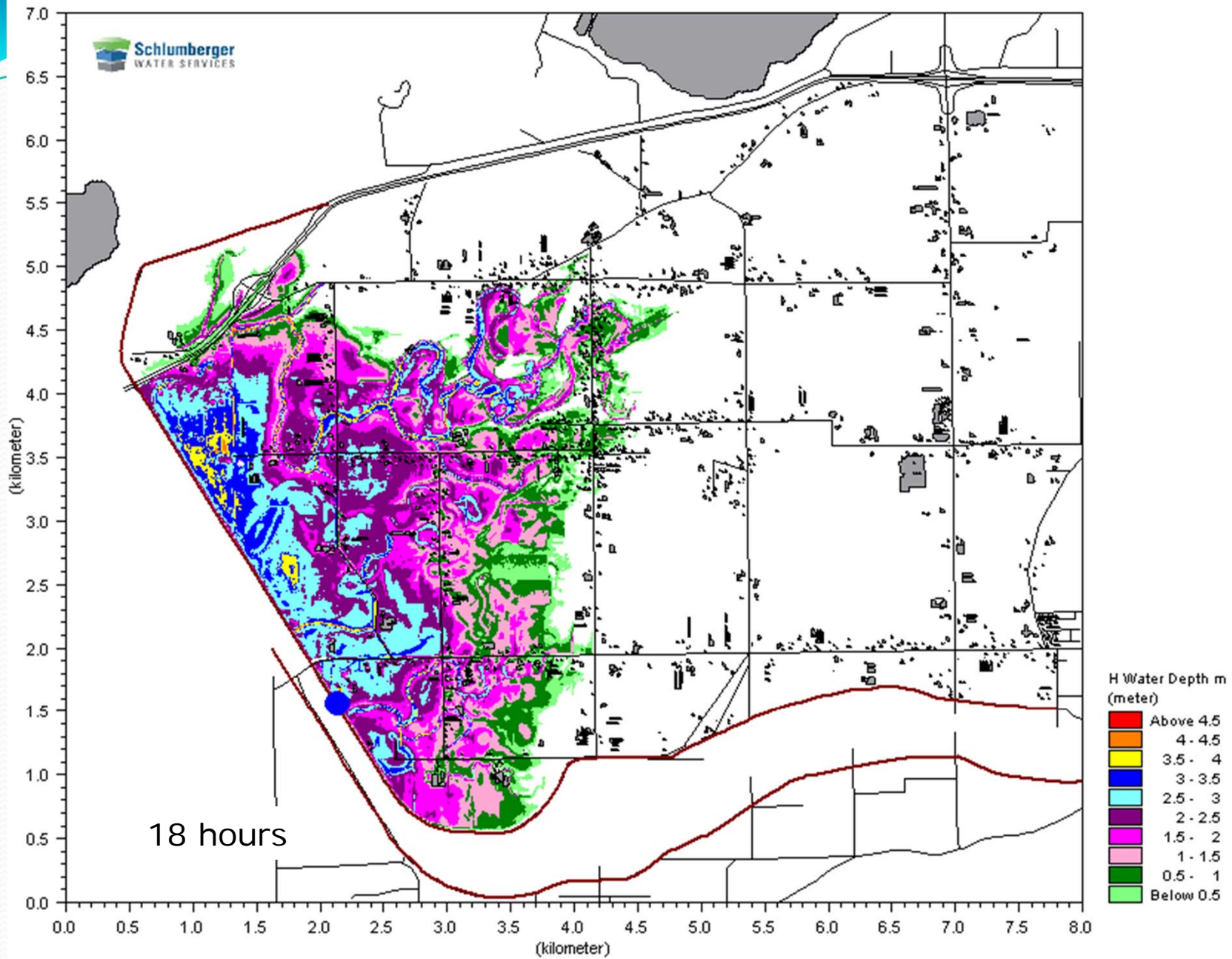
Downstream Dyke Breach North Side

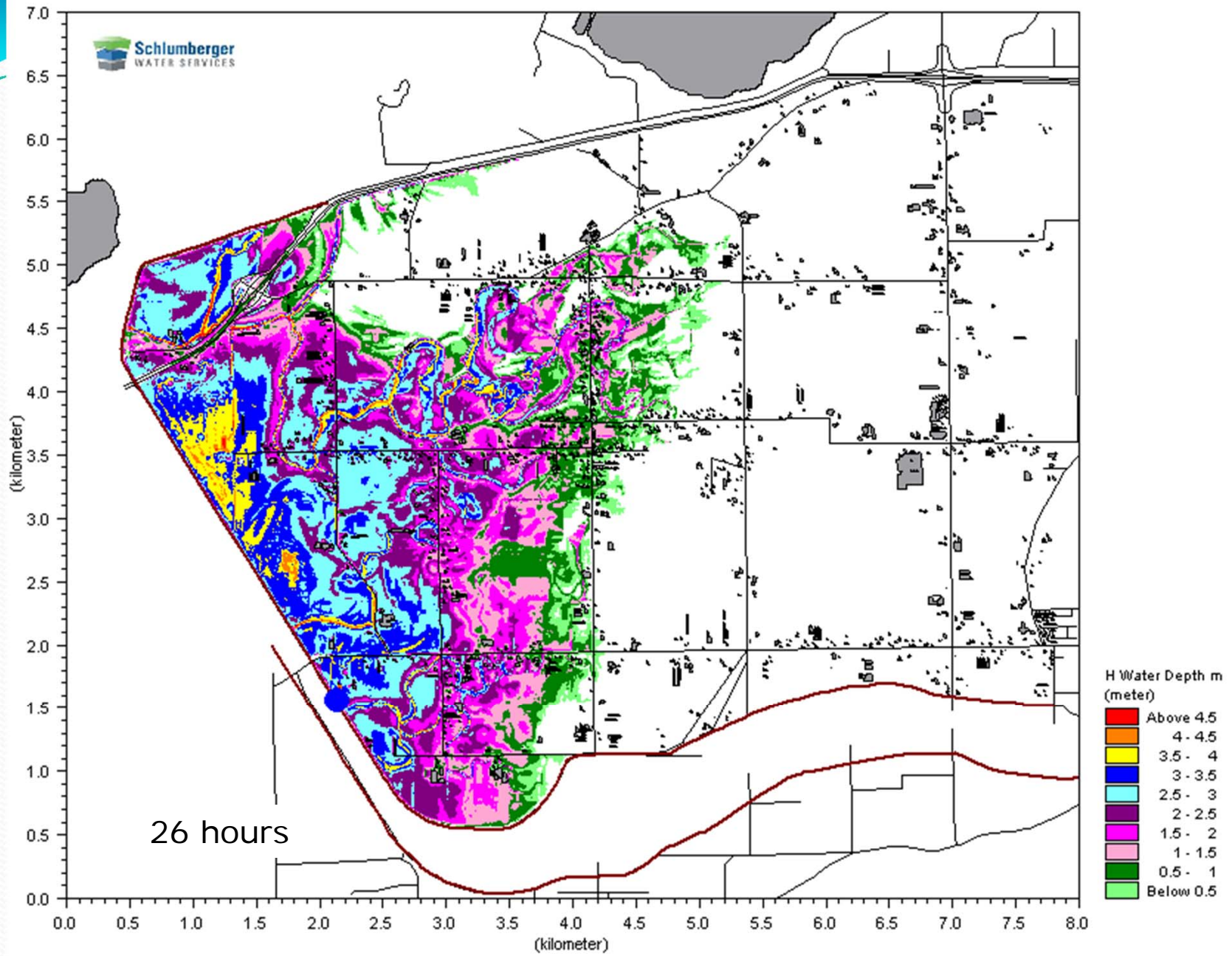














Flood Response Considerations

- Quick event with limited forecasting
- Relatively high velocity and rate of flow over floodplain



Vedder River Flood Response Plan

- Phase I – Pre-Flooding Activities
 - Triggered by weather forecast, heavy rain, rising water or River Forecast Centre report
 - Preparatory work
 - Flood Response Plan review
 - Preliminary notifications
 - Trail closures



Vedder River Flood Response Plan

- Phase II – Rising Water
 - Water levels reach bankfull
 - Daily dyke patrols
 - Monitoring of erosion and debris sites
 - Emergency Operations Centre may be activated
 - Evacuation alerts and orders for unprotected floodplain are considered
 - Public updates



Vedder River Flood Response Plan

- Phase III – Minor Flooding
 - The river has risen beyond its banks, water levels within 2.0 m of dyke crest
 - Hourly dyke patrols
 - Monitoring of erosion and debris sites
 - Evacuation alerts for protected floodplain are considered



Vedder River Flood Response Plan

- Phase IV – Severe Flooding
 - High water is within 1.0 metre of the dyke crest and rising
 - 24-hour continuous dyke patrols
 - Monitoring of erosion and debris sites
 - Evacuation orders for protected floodplain are considered



Vedder River Flood Response Plan

- Phase V – Clean Up
 - Assessment of affected area and damage inventory
 - Clean up of roads and utilities
 - Evacuation order rescinded
 - Clean drinking water
 - Sanitation systems
 - Disaster Financial Assistance applications



Summary

- Different factors affecting flood response on Vedder River versus Fraser River
 - Limited advance warning, rapid event, high velocities
- Vedder River Flood Response Plan developed to prevent loss of life and minimize damage
- Important for residents in the Vedder River floodplain to be aware of the risks and develop personal emergency preparedness plans



Information Sessions

- Tuesday, September 13 from 7 – 9 pm,
Greendale Fire Hall
 - Thursday, September 15 from 7 – 9 pm,
Yarrow Community Hall
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- Presentation followed by Q & A session,
emergency preparedness handouts
 - Information available on-line:
www.chilliwack.com/vedderriver



Recommendation

- That Council adopt the Vedder River Flood Response Plan